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EXAMINER

YIGDALL, MICHAEL J

ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,279

Applicant(s)

HIBDON, GREGORY

Examiner

Michael J. Yigdal

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12,14-18,20-26 and 33-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14-18,20-26 and 33-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's amendment and response filed on April 4, 2005 has been fully considered. Claims 1-3, 5-12, 14-18, 20-26 and 33-54 are pending.

### ***Response to Arguments***

2. Applicant's arguments with respect to independent claim 7 have been fully considered but they are not persuasive.

Applicant acknowledges that Tanguay discloses, "Alternatively, when preprocessed code 164 feeds into code processing program 210, code processing program 210 performs the same selection functions as are provided by user input 230. The selection functions may be the first step in some larger process (for example, compiling the code)." Nonetheless, Applicant contends that the only functions provided for user input 230 are to provide an input to the selective code viewer 220, and that there is no suggestion that expansion or contraction would affect compilation (Applicant's remarks, page 14, last paragraph to page 15, first paragraph).

However, Tanguay expressly discloses, "Selective code viewer 220 expands or contracts selected constructs in preprocessed code 164 in accordance with user input 230" (column 4, lines 52-54). Thus, the selection functions provided by user input 230 are to expand or contract selected constructs. The selected constructs are selected macro definitions (see, for example, column 1, lines 61-66), and thus the selection functions provided by user input 230 are to expand or contract selected macro definitions. Although the selective code viewer 220 is used to view the code, Tanguay discloses that alternatively, the code processing program 210 may be used to perform the same selection functions as the first step of a compilation process (see, for example,

column 4, lines 57-62). In other words, the code processing program 210 may expand or contract selected macro definitions for subsequent steps of a compilation process.

Similarly, Applicant contends that Tanguay does not suggest that some macros be hidden from a parser or compiler but only from the viewer on a display device (Applicant's remarks, page 15, third paragraph). However, as noted above, some macros may be contracted for subsequent steps of a compilation process. A contracted macro is considered a hidden macro (as opposed to an expanded macro, which is considered a visible macro). Therefore, some macros are hidden from a parser or compiler.

Applicant contends that Schubert does not appear to relate to "performing scan insertion using a parser," nor to "using an output module to generate a scan inserted HDL file." Applicant further contends that even if the instrumentation (disclosed by Schubert) is analogous to scan, there is no suggestion that scan be treated in any special way, and that even if comment objects (as disclosed by Schubert) might include an indicator to indicate whether the comment is an instrumentation directive related to scan, there is no suggestion to include such an indicator nor apply it to parsing and output (Applicant's remarks, page 16, third paragraph).

However, Schubert expressly discloses performing instrumentation using a parser (see, for example, column 21, lines 42-50). Schubert further discloses that the instrumentor generates an instrumented HDL file (see, for example, column 12, lines 36-41). Instrumentation is analogous to scan because, as Schubert discloses, the instrumentor may be used to perform boundary-scan and scan-chain analysis (see, for example, column 26, line 57 to column 27, line 2). Instrumentation directives related to scan are indicated by specially formed comments (see,

for example, column 23, line 63 to column 24, line 4), which are treated specially by the front-end module when parsing the HDL file (see, for example, column 23, lines 43-62).

In response to Applicant's argument that there is no suggestion to combine the references (Applicant's remarks, page 16, last paragraph to page 17, first paragraph), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

As set forth in the previous Office action, it would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the system of Tanguay with token objects that include visibility variables, such as the objects taught by Nackman, so as to persist the program representation and enable incremental compilation, thereby reducing the time to compile during program development and maintenance.

Applicant alleges that this motivation is not suggested by the art of record but only by the present application. However, Nackman expressly discloses that incremental compilation "would greatly reduce compilation time during program development and maintenance" (column 2, lines 24-27). Such incremental compilation is enabled by "a program representation that persists between compilations" (column 3, lines 17-24). Therefore, the motivation to combine Tanguay and Nackman is found in the reference itself.

Likewise, as set forth in the previous Office action, it would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the token objects of

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Tanguay and Nackman with a scan variable, such as the indicator taught by Schubert, so as to differentiate the tokens that are related to scan from other tokens.

Applicant alleges that this motivation is not suggested by the art of record but only by the present application. However, Schubert expressly discloses that the pragmas, which are the instrumentation directives related to scan, are written in the form of an HDL comment with a special indicator “to differentiate them from other comments” (column 23, lines 63-66). The reason for this is so that “the behavior of the design of the electronic system is not altered” and yet the front-end module can still “recognize and interpret these pragmas inside the comments” (column 23, lines 47-49 and 53-55). Therefore, the motivation to combine Tanguay, Nackman and Schubert is found in the reference itself.

Furthermore, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant’s disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to Applicant’s arguments regarding the intended use of the invention to “insert scan commands into an HDL design file in a way that preserves the text of the original file” (Applicant’s remarks, page 15, third paragraph, and page 17, first paragraph), the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Although the claims are interpreted in light of the specification, limitations from the specification

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are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, Schubert expressly discloses that the instrumentation directives (the scan commands) are inserted into the HDL design file such that the behavior of the design is persevered and that other tools reading the text of the file will be unaffected (see, for example, column 23, lines 43-62).

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6, 15 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 6 recites the limitation, “wherein the specific type of macro comprises a scan macro.” There is insufficient antecedent basis for “the specific type of macro” in the claim. Claim 1 does not recite any “specific type.”

Claim 15 recites the limitation, “wherein specific type of macro comprises a scan macro.” There is insufficient antecedent basis for “specific type of macro” in the claim. Claim 10 does not recite any “specific type.”

Claim 21 recites the limitation, “wherein specific type of macro comprises a scan macro.” There is insufficient antecedent basis for “specific type of macro” in the claim. Claim 16 does not recite any “specific type.”

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-12, 14-18, 20-26 and 33-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,946,488 to Tanguay et al. (art of record, "Tanguay") in view of U.S. Pat. No. 6,182,281 to Nackman et al. (art made of record, "Nackman") in view of U.S. Pat. No. 6,581,191 to Schubert et al. (art of record, "Schubert").

With respect to claim 1 (currently amended), Tanguay discloses a method comprising:

(a) reading a line of data from a file containing source code written in a high level language (see, for example, block 306 in FIG. 3 and column 5, lines 9-13, which shows reading lines from a source file, and column 4, line 65 to column 5, line 1, which shows that the source code is written in a high level language);

(b) generating a stream of tokens from the line of data (see, for example, block 308 in FIG. 3 and column 5, lines 14-16, which shows translating the source code into a stream of tokens), the stream of tokens representing some macros in the line of data as being expanded while other types of macros are not expanded (see, for example, column 1, lines 61-66, which shows selecting specific macros for expansion, such as based on the type of the macro, while others are not expanded).



Although Tanguay inherently represents and stores each token in some form so as to process the tokens, Tanguay does not expressly disclose:

(c) generating a token object for each token, the token object including a visibility variable to represent whether a parser and an output module may view the respective token.

However, Nackman discloses reading the source code of a program and generating tokens (see, for example, blocks 32 and 34 in FIG. 4), in a system for the incremental compilation of high-level languages (see, for example, the title). Such a system greatly reduces the compilation time during program development and maintenance (see, for example, column 2, lines 24-27). Nackman further discloses generating and persisting objects for the tokens represented in the program (see, for example, column 3, lines 17-24), such as macro objects (see, for example, column 7, lines 36-37). The macro objects include a hidden status, i.e. a visibility variable (see, for example, column 10, lines 31-39), to indicate whether other modules may view the macro (see, for example, column 10, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the system of Tanguay with token objects that include visibility variables, such as the objects taught by Nackman, so as to persist the program representation and enable incremental compilation, thereby reducing the time to compile during program development and maintenance.

Tanguay also discloses:

(d) parsing the stream of tokens using a parser and with reference to respective token objects so that some macros are visible to the parser and other types of macros are not (see, for example, block 310 in FIG. 3 and column 5, lines 17-18, which shows parsing the stream of

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tokens to execute preprocessing directives and expand macros, and column 4, lines 52-62, which shows expanding and contracting macro definitions to make them visible and hidden, respectively, to a subsequent process such as compilation);

(e) inserting commands representing operations to be performed by a macro into the stream of tokens if a macro is visible (see, for example, column 5, lines 61-62, which shows expanding a macro by inserting the macro definition, i.e. into the stream of tokens); and

(f) writing the stream of tokens to an output file using an output module and with reference to respective token objects so that some macros are expanded and other types of macros are not (see, for example, column 4, lines 35-47, which shows writing code, i.e. the stream of tokens, to an output file).

Although Tanguay discloses debugging source code (see, for example, column 2, lines 2-3), Tanguay in view of Nackman does not disclose expressly the limitations wherein:

- (i) the source code is written in a high level hardware description language; and
- (ii) some of the macros are scan related macros.

However, Schubert discloses debugging hardware designs that are written in hardware description languages (see, for example, the abstract). Schubert further discloses instrumenting the hardware design (see, for example, column 13, line 48 to column 14, line 7) based on instrumentation directives, such as pragmas or macros (see, for example, column 23, lines 43-62). The instrumentation is analogous to scan insertion (see, for example, column 26, line 57 to column 27, line 2), and thus the instrumentation directives function as scan macros.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use hardware description languages and scan related macros, such as taught by Schubert, in the system of Tanguay and Nackman, so as to debug hardware designs.

With respect to claim 2 (currently amended), Tanguay also discloses the limitation wherein generating a stream of tokens further comprises:

(a) determining whether tokens are present in either an input file, a look-ahead buffer, or a macro expansion list (see, for example, column 8, lines 61-63, which shows reading new tokens from a source file; also see, for example, column 9, lines 13-21, which shows a string table serving as a look-ahead buffer, and column 9, lines 28-34, which shows a representation comprising macro expansion operators, i.e. a macro expansion list); and

(b) responsive to finding tokens, reading the tokens first from the look-ahead buffer, then from the macro expansion list, then from said input file (see, for example, column 9, lines 13-21, which shows that tokens are first identified from the string table serving as a look-ahead buffer, column 9, lines 39-45, which shows that the string table then identifies tokens in macro expansions, and column 8, lines 61-63, which shows that new tokens, i.e. tokens not yet identified, are read from the source file);

(c) presenting the tokens to a parser so that any macro in the line of data appears to have been expanded (see, for example, column 9, lines 53-59, which shows presenting the tokens, including the expanded code, to either a viewer or a compiler, i.e. a parser).

With respect to claim 3 (previously presented), Tanguay also discloses the limitation wherein parsing further comprises:

(a) reading a token (see, for example, column 8, lines 61-67, which shows reading tokens);

(b) determining a type of the read token (see, for example, column 8, lines 61-67, which shows determining the type of each new token);

(c) responsive to determining that the read token is an end-of-line, processing an input line of tokens (see, for example, column 8, lines 61-67, which shows identifying syntactic elements, such as end-of-line tokens, and column 5, lines 12-16, which further shows that the tokens are processed in terms of input lines);

(d) responsive to determining that the read token is not a symbol, adding the read token to a current line token list (see, for example, column 9, lines 7-12, which shows adding tokens to a table or list, and column 11, lines 10-16, which shows a line database for storing information related to lines, i.e. lines comprised of tokens);

(e) responsive to determining that the read token is a symbol that indicates a beginning of a macro definition, recording a macro name and the macro definition and adding the read token to a look-ahead buffer (see, for example, column 9, lines 28-34, which shows identifying the beginning of a macro expansion or definition, and column 9, lines 13-21, which shows adding tokens to a string table serving as a look-ahead buffer; also see, for example, column 11, lines 33-36, which shows a macro database having records of macro references and expansions, i.e. macro names and definitions); and

(f) responsive to determining that the read token is a symbol that does not indicate a beginning of a macro definition, adding the read token to a current line token list (see, for example, column 9, lines 7-12, which shows adding tokens to a table or list, and column 11, lines

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10-16, which shows a line database for storing information related to lines, i.e. lines comprised of tokens).

With respect to claim 5 (previously presented), Schubert further discloses the limitation wherein source code written in a high level language comprises a hardware description language (HDL) for representing hardware designs (see, for example, the abstract).

With respect to claim 6 (currently amended), Schubert further discloses the limitation wherein the specific type of macro comprises a scan macro (see, for example, column 23, lines 43-62).

With respect to claim 7 (currently amended), Tanguay discloses a method for debugging software (see, for example, column 2, lines 2-3) comprising:

(a) reading source code, the source code including a plurality of macro definitions (see, for example, column 8, lines 61-63, which shows reading source code, and column 1, lines 61-66, which further shows that the source code includes macro definitions);

(b) creating a token stream based on the source code that includes multifaceted tokens that can be hidden from or made visible to a subsequent parsing process by expanding the plurality of macro definitions and making tokens associated with some macros visible to the subsequent parsing process and marking other tokens as hidden (see, for example, column 5, lines 14-16, which shows translating the source code into a stream of tokens, and column 4, lines 52-62, which shows expanding and contracting macro definitions to make the corresponding tokens visible and hidden, respectively, to a subsequent process such as compilation).

Although Tanguay inherently represents and stores each token in some form so as to process the tokens, Tanguay does not expressly disclose the limitation wherein the multifaceted tokens are associated with a token object for each token, the token object including a visibility variable to represent whether a parser and an output module may view the respective token.

However, Nackman discloses reading the source code of a program and generating tokens (see, for example, blocks 32 and 34 in FIG. 4), in a system for the incremental compilation of high-level languages (see, for example, the title). Such a system greatly reduces the compilation time during program development and maintenance (see, for example, column 2, lines 24-27). Nackman further discloses generating and persisting objects for the tokens represented in the program (see, for example, column 3, lines 17-24), such as macro objects (see, for example, column 7, lines 36-37). The macro objects include a hidden status, i.e. a visibility variable (see, for example, column 10, lines 31-39), to indicate whether other modules may view the macro (see, for example, column 10, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the system of Tanguay with token objects that include visibility variables, such as the objects taught by Nackman, so as to persist the program representation and enable incremental compilation, thereby reducing the time to compile during program development and maintenance.

Tanguay also discloses:

(c) performing macro expansion using a parser by parsing those of the multifaceted tokens that are visible to the parser based on the visibility variable and adding appropriate commands (see, for example, column 5, lines 17-18, which shows parsing the stream of tokens to

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execute preprocessing directives and expand macros, and column 5, lines 61-62, which shows expanding a macro by adding the macro definition, i.e. to the token stream); and

(d) using an output module to generate an expanded source code file containing expanded versions of the macro definitions which are visible to the output module based on the visibility variable and which are selected but that omits expanded versions of those that are not selected (see, for example, column 4, lines 35-47, which shows a selective preprocessor for generating an expanded source code file having the original code or the original code with expanded macro definitions).

Tanguay in view of Nackman does not disclose expressly the limitations wherein:

- (i) the source code is a hardware description language (HDL) representation of a hardware design;
- (ii) some of the macros relate to scan insertion;
- (iii) the token object includes a scan variable to represent whether the respective token is related to scan;
- (iv) scan commands are added to the representation; and
- (v) the output file is a scan inserted HDL file.

However, Schubert discloses debugging hardware designs that are written in hardware description languages (see, for example, the abstract). Schubert further discloses instrumenting the hardware design and outputting an instrumented HDL file (see, for example, column 13, line 48 to column 14, line 7) based on instrumentation directives, such as pragmas or macros (see, for example, column 23, lines 43-62). The instrumentation is analogous to scan insertion (see, for example, column 26, line 57 to column 27, line 2), and thus the instrumentation directives

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function as scan macros. Schubert further discloses comment objects that include indicators to represent whether the comment is an instrumentation directive related to scan, so as to differentiate such instrumentation directives from other comments (see, for example, column 23, line 63 to column 24, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the system of Tanguay and Nackman with the features taught by Schubert, so as to debug hardware designs. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the token objects of Tanguay and Nackman with a scan variable, such as the indicator taught by Schubert, so as to differentiate the tokens that are related to scan from other tokens.

With respect to claim 8 (previously presented), Schubert further discloses the limitation wherein HDL comprises a high-level language (see, for example, column 8, lines 53-63).

With respect to claim 9 (currently amended), Schubert further discloses the limitation wherein said hardware design represents an integrated circuit design (see, for example, column 8, lines 16-26).

With respect to claim 10 (currently amended), the limitations recited in the claim are analogous to those of claim 1 (see the rejection of claim 1 above).

Note that Tanguay also discloses:

(a) a storage device having stored therein one or more routines for selectively expanding macros within source code (see, for example, memory 130 in FIG. 1, which shows a storage



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device having a selective preprocessor, and column 1, lines 61-66, which shows selectively expanding macros in source code); and

(b) a processor coupled to the storage device for executing the one or more routines for selectively expanding macros within source code (see, for example, CPU 170 and bus 180 in FIG. 1, which shows a processor coupled to the storage device).

With respect to claim 11 (previously presented), the limitations recited in the claim are analogous to those of claim 2 (see the rejection of claim 2 above).

With respect to claim 12 (previously presented), the limitations recited in the claim are analogous to those of claim 3 (see the rejection of claim 3 above).

With respect to claim 14 (previously presented), the limitations recited in the claim are analogous to those of claim 5 (see the rejection of claim 5 above).

With respect to claim 15 (previously presented), the limitations recited in the claim are analogous to those of claim 6 (see the rejection of claim 6 above).

With respect to claim 16 (currently amended), the limitations recited in the claim are analogous to those of claim 1 (see the rejection of claim 1 above).

Note that Tanguay also discloses a machine-readable medium (see, for example, memory 130 in FIG. 1) and a processor (see, for example, CPU 170 in FIG. 1).

With respect to claim 17 (previously presented), the limitations recited in the claim are analogous to those of claim 2 (see the rejection of claim 2 above).

With respect to claim 18 (previously presented), the limitations recited in the claim are analogous to those of claim 3 (see the rejection of claim 3 above).

With respect to claim 20 (previously presented), the limitations recited in the claim are analogous to those of claim 5 (see the rejection of claim 5 above).

With respect to claim 21 (previously presented), the limitations recited in the claim are analogous to those of claim 6 (see the rejection of claim 6 above).

With respect to claim 22 (previously presented), the limitations recited in the claim are analogous to those of claim 7 (see the rejection of claim 7 above).

Note that Tanguay also discloses a machine-readable medium (see, for example, memory 130 in FIG. 1) and a processor (see, for example, CPU 170 in FIG. 1).

With respect to claim 23 (previously presented), the limitations recited in the claim are analogous to those of claim 8 (see the rejection of claim 8 above).

With respect to claim 24 (previously presented), the limitations recited in the claim are analogous to those of claim 9 (see the rejection of claim 9 above).

With respect to claim 25 (previously presented), Tanguay also discloses the limitation wherein writing comprises:

(a) writing expanded macro tokens to the output file if the macro is of the specific type of macro (see, for example, selective preprocessor 200 in FIG. 2 and column 4, lines 35-47, which shows writing code in expanded form, i.e. code including expanded macro tokens, to an output

file, and column 4, lines 48-62, which further shows expanding specific macros based on user input, such as according to the type of macro, and using the same selection function in a process such as compilation); and

(b) writing an original macro call to the output file if the macro is not the specific type of macro (see, for example, selective preprocessor 200 in FIG. 2 and column 4, lines 35-47, which shows writing original code, i.e. code including original macro calls, to an output file, and column 4, lines 48-62, which further shows expanding specific macros based on user input, such as according to the type of macro, and using the same selection function in a process such as compilation).

With respect to claim 26 (previously presented), the limitations recited in the claim are analogous to those of claim 2 (see the rejection of claim 2 above).

With respect to claim 33 (previously presented), the limitations recited in the claim are analogous to those of claim 7 (see the rejection of claim 7 above).

Note that the recited “IsScan variable” corresponds to the “scan variable” of claim 7.

With respect to claim 34 (previously presented), the limitations recited in the claim are analogous to those of claim 7 (see the rejection of claim 7 above).

Note that the recited “hidden token type variable” corresponds the “visibility variable” of claim 7.

With respect to claim 35 (previously presented), the limitations recited in the claim are analogous to those of claim 8 (see the rejection of claim 9 above).

With respect to claim 36 (previously presented), the limitations recited in the claim are analogous to those of claim 9 (see the rejection of claim 9 above).

With respect to claim 37 (previously presented), Schubert further discloses the limitation wherein generating comprises:

(a) receiving a token from a scan insertion module (see, for example, column 13, lines 48-49, which shows receiving the HDL representation, i.e. the tokens);

(b) determining whether the token involves scan related changes (see, for example, column 13, lines 50-65, which shows determining scan related changes, and column 23, lines 43-62, which further shows determining whether portions of the HDL representation, i.e. the tokens, involve scan related changes); and

(c) writing the token to an output file if the token is not scan related (see, for example, column 13, line 66 to column 14, line 7, which shows writing the original HDL representation, i.e. the tokens that are not scan related, to an output file).

With respect to claim 38 (previously presented), Schubert further discloses determining whether more tokens are to be received from the scan insertion module and repeating determining whether the token involves scan related changes and writing the token to an output file until no tokens remain (see, for example, column 13, line 48 to column 14, line 7, which shows performing the steps for the entire HDL representation, i.e. repeating the steps for each token).

With respect to claim 39 (previously presented), the limitations recited in the claim are analogous to those of claim 2 (see the rejection of claim 2 above).

With respect to claim 40 (previously presented), the limitations recited in the claim are analogous to those of claim 2 (see the rejection of claim 2 above).

With respect to claim 41 (previously presented), Schubert further discloses the limitation wherein generating comprises writing the scan inserted tokens into the HDL file from a buffer that preserves the text of the original file (see, for example, column 13, line 48 to column 14, line 7, which shows generating a scan inserted HDL file that includes the text of the original file).

With respect to claim 42 (currently amended), the limitations recited in the claim are analogous to those of claim 3 (see the rejection of claim 3 above).

With respect to claim 43 (previously presented), the limitations recited in the claim are analogous to those of claim 3 (see the rejection of claim 3 above).

With respect to claim 44 (previously presented), the limitations recited in the claim are analogous to those of claim 33 (see the rejection of claim 33 above).

Note that Tanguay also discloses a machine-readable medium (see, for example, memory 130 in FIG. 1) and a processor (see, for example, CPU 170 in FIG. 1).

With respect to claim 45 (previously presented), the limitations recited in the claim are analogous to those of claim 34 (see the rejection of claim 34 above).

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With respect to claim 46 (previously presented), the limitations recited in the claim are analogous to those of claim 37 (see the rejection of claim 37 above).

With respect to claim 47 (previously presented), the limitations recited in the claim are analogous to those of claim 39 (see the rejection of claim 39 above).

With respect to claim 48 (previously presented), the limitations recited in the claim are analogous to those of claim 41 (see the rejection of claim 41 above).

With respect to claim 49 (previously presented), the limitations recited in the claim are analogous to those of claim 33 (see the rejection of claim 33 above).

Note that Schubert further discloses a scan insertion tool (see, for example, instrumentor 326 in FIG. 3).

With respect to claim 50 (previously presented), the limitations recited in the claim are analogous to those of claim 42 (see the rejection of claim 42 above).

With respect to claim 51 (previously presented), the limitations recited in the claim are analogous to those of claim 43 (see the rejection of claim 43 above).

With respect to claim 52 (previously presented), the limitations recited in the claim are analogous to those of claim 34 (see the rejection of claim 34 above).

With respect to claim 53 (previously presented), the limitations recited in the claim are analogous to those of claim 39 (see the rejection of claim 39 above).

With respect to claim 54 (previously presented), the limitations recited in the claim are analogous to those of claim 37 (see the rejection of claim 37 above).

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

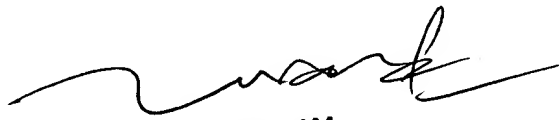
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MY

Michael J. Yigdall  
Examiner  
Art Unit 2192

mjy



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SUPERVISORY PATENT EXAMINER